

**ABSTRACT**

The present invention relates to the co-production of unsaturated aldehydes via a crossed-aldol condensation reaction catalyzed by recyclable water-soluble phase-transfer catalysts or the hydroxides thereof. The aldehydes are then hydrogenated to the desired alcohol products or saturated aldehyde feed stocks. Specifically, methods in which 2,4-diethyloctanol is co-produced with 2-ethylhexanol in batch and continuous processes are described. Recovery of the phase-transfer catalyst through water washing followed by “salting out” from the washings is also demonstrated.